Remarks

At the outset, the Examiner has objected to the specification and the claims for not employing SEQ ID NOs when referring to nucleotide or amino acid sequences. Applicants have made the appropriate corrections to the specification and the claims. Additionally, Applicants have amended certain of the claims to correct typographical errors. No new matter has been introduced into this application by reason of any of the amendments presented herewith. In view of the amendments presented herewith, it is respectfully requested that the objection set forth in the November 3, 2003 Official Action be withdrawn.

A restriction requirement under 35 U.S.C. §§121 and 372 was also set forth in the Official Action dated November 3, 2004 in the above-identified patent application. It is the Examiner's position that claims 1-34 in the present application are drawn to six (6) patentably distinct inventions which are as follows:

Group I: Claims 1-8, 16-24, 30, and 31 drawn to an isolated nucleic acid molecule which comprises a VRN1 nucleotide sequence encoding a polypeptide, or variant thereof; a recombinant vector, a host cell, and a transgenic plant which comprise the nucleic acid molecule; methods for producing the recombinant vector, the host cell, and the transgenic plant; and methods for reducing vernalization requirement of a plant;

Group II: Claims 9, 10, 12-15, and 29 drawn to an isolated probe or primer and methods for identifying or cloning a nucleic acid comprising said probe or primer;

Group III: Claim 11 drawn to a process for producing a nucleic acid;

Group IV: Claims 25-28 drawn to an isolated polypeptide and methods of making said polypeptide;

Group V: Claim 33 drawn to a method for increasing the vernalization requirement of a plant comprising antisense, co-suppression, or a ribozyme; and

Group VI: Claim 34 drawn to an isolated promoter of the VRN1 gene or variant thereof.

It is noted that claim 32 is not mentioned in the restriction requirement. It is assumed that claim 32 should be included with the Group I claims, as it depends from claim 30.

Additionally, if Group I is elected, the Examiner requires the election of one sequence selected from the group consisting of:

1) the polypeptide of Figure 7;
2) the VRN1 nucleotide sequence as shown in Annex I; and
3) the VRN1 paralogue RTV1 of Figure 9.

The Examiner also requires the election of one of the sequences presented in claim 10, if Group II is elected.

It is the Examiner's position that Groups I through VI are subject to restriction because they allegedly lack the same or corresponding technical feature. Specifically, it is the Examiner's position that Finnegan et al. (PNAS (1998) 95:5824-58529) teach an isolated nucleic acid molecule which comprises a nucleotide sequence encoding a protein which alters the vernalization response of a plant. Additionally, the Examiner contends that Groups I through VI are drawn to products and processes not shared by each other and, therefore, are not linked by a single technical feature.

Applicants respectfully traverse the restriction between the Group I through VI inventions. A withdrawal of the

restriction requirement, or at least a modification of the restriction requirement, is clearly in order for the reasons set forth below.

First, Applicants respectfully submit that the restriction requirement set forth above is improper for failure to comply with the relevant provisions of the Manual of Patent Examining Procedure (M.P.E.P.) pertaining to unity of invention determinations. The present application was filed under 35 U.S.C. §371 as a U.S. national stage application under the Patent Cooperation Treaty.

As stated in § 1893.03(d) of the M.P.E.P.:

> Examiners are reminded that unity of invention (not restriction) practice is applicable in international applications (both Chapter I and II) and in national stage applications submitted under 35 U.S.C. § 371.

The principles of unity of invention are used to determine the types of claimed subject matter and the combinations of claims to different categories of invention that are permitted to be included in a single international or national stage patent application. The basic principle is that an application should relate to only one invention or, if there is more than one invention, that applicant would have a right to include in a single application only those inventions which are so linked as to form a single general inventive concept.

A group of inventions is considered linked to form a single general inventive concept where there is a technical relationship among the inventions that involves at least one common or corresponding special technical feature. The expression "special technical features" refers to those technical features that define the contribution which each claimed invention, considered as a whole, makes over the prior art.

In view of these rules, it is noteworthy that during the international stage of this application, in the International

Preliminary Examination Report issued January 11, 2002, the Examiner did not make a lack of unity finding, and considered all of the claims to be directed to a single invention.

Plainly, the restriction requirement of November 3, 2004 fails to comply with the established United States Patent and Trademark Office practice of following the international rules regarding unity of invention in the prosecution of applications filed under § 371. It is therefore unclear how the Examiner could conclude that the instant application has six Groups of inventions after it was determined that the international application, from which the instant application originates, has unity of invention.

Second, Applicants disagree with the Examiner's position that Groups I through VI lack the same or corresponding special technical feature. The Examiner contends that Finnegan et al. (PNAS (1998) 95:5824-5829) teach a VRN1 nucleotide sequence. The Examiner alleges that "VRN1 nucleotide sequence" is not defined in the instant application and, therefore, interprets the phrase to mean any nucleotide sequence which alters the vernalization of any plant. Applicants, however, respectfully submit that the instant specification clearly describe VRN1 in terms of specific sequences and variants (see, e.g., pages 2-18). Indeed at page 18, lines 28-30, the instant application teaches that the term "VRN1" covers "any of the nucleic acids of the invention described above, including functional variants." Clearly, Finnegan et al. fail to teach or suggest an isolated VRN1 nucleic acid molecule meeting this definition. Furthermore, Applicants submit that certain of the claims (e.g., claims 2-7, 9-15, 26-29, and 33) recite specific amino acid or nucleotide sequences which Finnegan et al. plainly do not teach. Thus, the Examiner's contention that the VRN1 nucleotide sequence is not defined is clearly erroneous for certain of the instant claims. In light of the foregoing,

Applicants respectfully submit that Groups I through VI possess the same or corresponding special technical feature, i.e. a nucleic acid molecule which comprises a VRN1 nucleotide sequence.

Third, with regard to the election of species, Applicants submit that the VRN1 nucleotide and amino acid sequences shown in Figure 7 (i.e., SEQ ID NOs: 10 and 11) are unified by a common inventive concept, namely the VRN1 nucleotide sequence which the present application provides for the first time. Indeed, the nucleic acid molecule and polypeptide have unity of invention because they share the "same technical relationship." In particular, the special technical feature which they share is the sequence of amino acids in the polypeptide, which is an essential structural element of the polypeptide and which is encoded by an exactly corresponding sequence of codons in the nucleic acid. Indeed, Example 17 of Annex B, Part 2 of the PCT Administrative Instructions as amended 01 July 1992 contained in Appendix AI of the M.P.E.P., teaches:

> ***Example 17***
>
> Claim 1: Protein X.
>
> Claim 2: DNA sequence encoding protein X.
>
> Expression of the DNA sequence in a host results in the production of a protein which is determined by the DNA sequence. The protein and the DNA sequence exhibit corresponding special technical features. Unity between claims 1 and 2 is accepted.

Applicants also submit that there would be no undue burden on the Examiner in examining these species together.

Fourth, even if the Examiner is not persuaded by the above arguments to withdraw the restriction requirement between Groups I through VI, Applicants urge at least a modified restriction requirement wherein Groups I, III, V, and VI are rejoined. As stated hereinabove, lack of unity standards, and not restriction practice, should be employed for a national stage application submitted under 35 U.S.C. § 371. According to the PCT Administrative Instructions, as

amended 01 July 1992, in Appendix AI, Annex B, Part 1, of the M.P.E.P.:

> (c) **Independent and Dependent Claims**. Unity of invention has to be considered in the first place only in relation to the independent claims in an international application and not the dependent claims. By "dependent" claim is meant a claim which contains all the features of another claim and is in the same category of claim as that other claim (the expression "category of claim" referring to the classification of claims according to the subject matter of the invention claimed for example, product, process, use or apparatus or means, etc.).
>
> > (i) If the independent claims avoid the prior art and satisfy the requirement of unity of invention, no problem of lack of unity arises in respect of any claims that depend on the independent claims. In particular, it does not matter if a dependent claim itself contains a further invention. Equally, no problem arises in the case of a genus/species situation where the genus claim avoids the prior art. Moreover, no problem arises in the case of a combination/subcombination situation where the subcombination claim avoids the prior art and the combination claim includes all the features of the subcombination.
>
> (e) **Combinations of Different Categories of Claims**. The method for determining unity of invention under Rule 13 shall be construed as permitting, in particular, the inclusion of any one of the following combinations of claims of different categories in the same international application:
>
> > (i) in addition to an independent claim for a given product, an independent claim for a process specially adapted for the manufacture of the said product, and an independent claim for a use of the said product, or ...

Applicants submit that it is clear that the special technical feature which links the claims of Groups I, II, V, and VI, i.e., the isolated VRN1 nucleic acid, defines a contribution over the prior art. Furthermore, this feature is embodied as an essential feature of **all** of the Groups defined by the Examiner. Thus, the restriction requirement is improper under PCT Rules 13.1 and 13.2, as set forth in the International Search Report. Additionally, the claimed VRN1

sequences, while having different nucleic acid sequences and thus, by definition, different structures, are not "unrelated" to each other, but rather are closely related in terms of both structure and function. Thus, Applicants submit that all claims dependent from either claim 1 or 2 should be rejoined.

More specifically, Group III, as indicated by the Examiner, relates to a method for producing a nucleic acid molecule of the instant invention. With regard to unity of invention, processes for manufacture of a product are construed as sharing the same inventive concept as the product. Accordingly, Group III should be rejoined with Group I. Furthermore Group V should be rejoined with Group I because the claim of Group V recites the same special technical feature, i.e., isolated VRN1 nucleic acid molecules, recited in the claims of Group I. Group VI should also be rejoined with Group I because the promoter of the VRN1 gene is part of the isolated VRN1 nucleic acid molecule of the instant invention.

Finally, while the United States Patent and Trademark office has a legitimate interest in obtaining proper revenue from filing and issuance fees, it does not have the unrestrained power to tax inventors. The Applicants are entitled to obtain patent protection on each novel aspect of the invention. If Applicants are forced to divide this application into six (6) separate patent applications as a result of the restriction requirement imposed by the Examiner, the Applicants will be unduly and unfairly burdened with excessive fees and cost associated with the prosecution and maintenance of multiple patents, as contrasted to a single patent.

For all of the foregoing reasons, Applicants respectfully request withdrawal or, at the very least, modification of the present restriction requirement.

In order to be fully responsive to the above-mentioned requirement, Applicants hereby elect, with traverse, Group I,

claims 1-8, 16-24, 30, 31 and 32 drawn to an isolated nucleic acid molecule which comprises a VRN1 nucleotide sequence encoding a polypeptide, or variant thereof; a recombinant vector, a host cell, and a transgenic plant which comprise the nucleic acid molecule; methods for producing the recombinant vector, the host cell, and the transgenic plant; and methods for reducing vernalization requirement of a plant. Applicants also elect the species of the polypeptide of Figure 7 (SEQ ID NO: 11).

Applicants hereby reserve the right to file one or more continuing applications, as provided in 35 U.S.C. §120, on the subject matter of any claims finally held withdrawn from consideration in this application.

Early and favorable action on the merits of this application is respectfully solicited.

Respectfully submitted,
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